Supporting Quality Improvement Processes to Improve Care for People with Diabetes

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OVERVIEW: QUALITY IMPROVEMENT PLAN

Introduction

Quality improvement (QI) for public health involves the use of data-driven processes and tools, such as use of the Plan-Do-Study-Act (PDSA) model and a patient registry, to continuously improve procedures and ultimately the health of a population (Figure 1). The Montana Department of Public Health & Human Services (MT DPHHS) Diabetes Program staff developed a QI Plan to strategically guide QI for diabetes care in health systems.

Figure 1. The Plan-Do-Study-Act (PDSA) model.

Purpose

Partner with primary care providers and provide leadership, customer support, and tools for population-based QI processes to improve the quality of diabetes care and the health of Montanans with diabetes.

Objective

Develop a QI Plan and partner with three different types of health systems to implement the PDSA Cycle, document process changes, and measure health outcomes.

Methods

The MT Diabetes Program developed a QI Plan to connect public health with primary care. The QI Plan defined the role of the state health department's diabetes program to use systematic approaches to support health systems implementing QI processes to improve diabetes care.

The plan identified the priorities for health system QI for diabetes care. It included a mission, desired outcomes, strategies, activities, lead staff, partners, timeline, budget, and performance measures. A narrative and evaluation plan explained the context, measurement, and targets.

The QI Plan was developed using an iterative, collaborative process, which involved internal and external partners in public health and clinical care. Key partners involved were the MT Diabetes Program staff, MT Diabetes Advisory Coalition members, MT DPHHS Public Health & Safety Division leadership team, MT Medicaid, and the technical assistance teams for the Centers for Disease Control & Prevention (CDC) Division of Diabetes Translation and Centers for Medicare & Medicaid Services (CMS). Alignment was demonstrated with the partners' strategic plans and goals. The plan supports the MT DPHHS vision to achieve a healthier Montana and our mission to improve the health, well-being, and self-reliance of all Montanans.

DQCMS Diabetes Quality Care Monitoring System (MT, ND, WY)

The program provided health systems with technical assistance, tools, funding, and feedback reports. This included the free patient registry software, the Diabetes Quality Care Monitoring System (DQCMS). These three case studies represent a selection of primary care practices that used these tools and the outcomes that they achieved.

Conclusion

The results from these three case studies provide evidence that successful QI processes are effective for greater adherence to clinical practice recommendations, adoption of team-based care, and improved health outcomes for patients with diabetes.

Lessons Learned

Public health programs can be an integral partner in QI processes by providing resources to implement QI interventions and evaluate effectiveness, accessibility, and quality of individual and population-based health services.

CASE STUDY A: FAITH-BASED FREE MEDICAL CLINIC

Introduction

- ***Health System:*** Shepherd's Hand Free Clinic (SHFC) in Whitefish, MT
- ***Mission:*** To be a place of hope that builds community and changes lives.
- ***Patient Population:*** People who were ≤200% of federal poverty level and did not qualify for other services.
- ***Services:*** Operating with a 6:1 ratio of services valued to dollars spent, the providers saw patients one evening per week. The services provided were pharmacy, laboratory and imaging services, and referrals.
- ***Staff:*** Executive Director/Clinical Director, Program Assistant, Medical Director, and 200 volunteers. Leadership were a 9-member Board of Directors and 5-member Quality Assurance (QA) & Programs Committee.
- ***QI Summary:*** Wrote a QA Policy and Plan and used the PDSA model to improve comprehensive diabetes care.

Methods

In 2010 SHFC began partnering with the MT Diabetes Program to obtain technical assistance, resources, and a free patient registry to identify diabetes patients and track their outcomes. SHFC staff used the PDSA model:

PLAN: The QI goals were to (a) improve the quality of care for their patients with diabetes and (b) see increased compliance of patient follow-through with recommendations and wellness measures.

DO: The QA & Programs Committee focused on four areas.

1. ***Documentation*** using the registry to track patient care with an individual patient profile, which summarized health markers and recommendations for labs, eye exams, foot exams, and other preventive services/ referrals.
2. ***Outreach*** using the registry to create and mail care reminder letters with vouchers for vaccinations to patients.
3. ***Clinic workflow and system changes*** where patients with diabetes saw specific providers to improve the continuity of care and charts were labeled with a sticker so staff could easily identify patients with diabetes.
4. ***Data-driven QI*** using quarterly QI reports from the registry to evaluate the clinic's performance in relation to benchmarks and statewide averages. SHFC surveyed patient and volunteer staff to assess satisfaction.

STUDY: SHFC reported process and outcome improvements as well as challenges to act upon.

- ***Process improvements:*** Buy-in from staff and volunteers was assured because quality care was one of their core values and the clinic workflow and systems were part of their orientation and ongoing training process.
- ***Outcome improvements:*** From 2012 to 2013, the SHFC increased the percentage of patients with diabetes who had a documented
  - pneumococcal vaccination from 0% to 19%
  - influenza vaccination from 7% to 26%
  - dilated eye exam from 16% to 47%
  - foot exam from 7% to 60%
  - monofilament foot exam for high-risk patients from 0% to 88%
  - tobacco use assessment among tobacco users from about 50% to 100%
- ***Challenges:*** The clinic workflow and system changes were confusing to volunteers who only worked monthly. The information generated by the registry was too cumbersome to evaluate in the typical course of a clinic night.

ACT: SHFC adapted their approach with the registry by adding documentation, review, and charting procedures.

- ***Annual visit form:*** Diabetes managers documented patient care needs after a chart review of patients who were seen during clinic the night before to consistently maximize patient follow-up.
- ***Follow-up letter with checklist:*** Letters were mailed to patients along with lab orders or referral paperwork.
- ***Charting:*** The checklist and annual visit form data were entered into the registry for an updated individual patient profile for the chart, which was marked with the month that all diabetes preventive services are due.

Conclusion

Small, realistic changes with regular monitoring were key contributors to the improvements in comprehensive diabetes care in a clinic serving a population that faces significant health disparities and barriers to care.

Lessons Learned

The QI process supported the clinic in providing more consistent and better quality care for their patients with diabetes, especially the ability to connect patients with wellness opportunities and education that will decrease the patient risk of morbidity and mortality from chronic disease.

CASE STUDY B: FEDERALLY QUALIFIED HEALTH CENTER

Introduction

- ***Health System:*** Bullhook Community Health Center (CHC) in Havre, MT
- ***Mission:*** Excellence in patient-centered, accessible, cost-effective, and timely primary healthcare for all.
- ***Patient Population:*** Focus on uninsured and underinsured patients, and Medicaid beneficiaries.
- ***Services:*** A patient-centered medical home that provides team-based medical, dental, and preventive services, care management, education, and empowerment of patients with a sliding fee scale.
- ***Staff:*** The new five-member QI team consisted of a Family Nurse Practitioner, two Registered Nurses, and two Medical Assistants was assembled in February 2014. Prior to that, locum tenens had been employed.
- ***QI Summary:*** Used the PDSA model to implement clinic workflow systems and improve annual A1C and LDL testing rates for patients with diabetes enrolled in Medicaid.

Methods

In 2014 Bullhook CHC received a mini-grant from MT Medicaid to use improve adherence to evidence-based medicine for adult patients with diabetes. The Bullhook CHC QI team used the PDSA model:

PLAN: The QI goal was to increase the number of patients with diabetes with an annual A1C and LDL test by improving clinic procedures and patient access to education.

- ***Indicators:*** Number of patients with diabetes with an
  - Annual A1C test
  - A1C test prior to or at the visit
  - A1C test after the visit
  - Annual LDL test
  - LDL test prior to or at the visit
  - LDL test after the visit

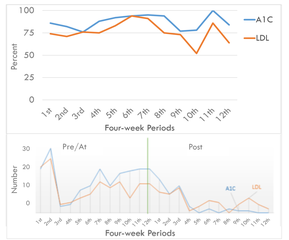

Figure 2. Annual A1C and LDL testing rates (above) and A1C and LDL testing before or during the visit compared to after the visit (below), measured in four-week periods from January to December 2014.

DO: The QI team implemented four strategies.

1. ***Daily team huddles*** with individual patient profiles to identify patients with diagnosed diabetes and to inform clinic staff of gaps in care.
2. ***Follow-up care plans.*** Clinic staff made appointments for ophthalmology, dental care, nutrition, education, and counseling during the visit. Reminders were sent directly to patients for lab tests due.
3. ***Patient-centered care planning*** throughout the clinic visit. Patients were empowered to drive the identification of care plan priorities and goals. Staff were trained in and practiced the Teach-back technique during visits.
4. ***Data-driven QI.*** Staff regularly monitored data and assessed trends and progress toward benchmarks.

STUDY: The percentage of patients with an annual A1C test increased slightly, but decreased slightly for those with an annual LDL test. However, there was little movement in the overall trend in these annual testing rates. The percentage of patients with an annual A1C prior to or at the clinic visit increased from 49% to 100%, and the percentage patients with an annual LDL prior to or at the clinic visit increased from 51% to 67% (Figure 2).

ACT: Future plans included the implementation of a group meeting for patients with diabetes once every three months for education, testing and individual consultation.

Conclusion

Improvements were seen in shifting the number of lab tests for A1C and LDL that were completed prior to or at the visit versus after the visit with the provider. This process change made it easier to provide appropriate education and adjust treatment at the time of the visit.

Lessons Learned

Team work is essential for QI processes. Inclusion of all staff, no matter the extent of their role in the project, can have a significant impact on the success of the project via adoption of changes in an engaged and timely manner for the day-to-day operations necessary to achieve the goal.

CASE STUDY C: INTERNAL MEDICINE

Introduction

South Hills Internal Medicine Associates

- ***Health System:*** South Hills Internal Medicine Associates in Helena, MT
- ***Mission:*** Provide exceptional and compassionate medical care.
- ***Patient Population:*** Adolescents, adults, and the elderly.
- ***Services:*** General internal medicine, which is long-term, comprehensive care managing both common and complex illness. Diagnosis and treatment of cancer, infections, and diseases affecting the circulatory, genitourinary, musculoskeletal, digestive, respiratory, nervous, endocrine, and vascular systems. Primary care, which incorporates an understanding of disease prevention, wellness, and mental health.
- ***Staff:*** Two Internal Medicine Physicians plus support staff.
- ***QI Summary:*** Tracked patients with diabetes with an A1C between 7% and 9%. Educated patients using a toolkit, promoted lifestyle changes, made medication adjustments, and referred to a diabetes educator.

Methods

In 2012 a physician at South Hills Internal Medicine Associates partnered with the MT Diabetes Program to pilot test an A1C improvement toolkit.

PLAN: The QI goal was to reduce A1C levels, improve diabetes management and prevent complications.

DO: The primary care provider focused on five patient care themes.

1. ***Data-driven QI*** by tracking pre- and post-intervention A1C values. The physician utilized the DQCMS Advanced Search to identify patients with diabetes who had an A1C level greater than 7% and less than 9%.
2. ***Education.*** The physician sent a letter about the A1C improvement initiative to patients, who could request an A1C toolkit using an enclosed reply postcard. The kit included a variety of educational materials about A1C testing, carbohydrate counting, healthy eating and nutrition, portion control, medication adherence and physical activity. The physician educated patients on A1C control and carbohydrate counting.
3. ***Lifestyle change.*** The kits also included a 14-day log for tracking nutrition, physical activity, and medications; lunch bag; pedometer; and *The CalorieKing Calorie, Fat & Carbohydrate Counter* book.
4. ***Medication management***. The physician used the ASK-20 survey to assess medication adherence issues and made adjustments to the medication regimen as needed.
5. ***Referrals to a diabetes educator***. The physician made referrals to a diabetes educator for diabetes self-management education and support.

STUDY: Patient A1C testing dates and levels were tracking using the patient registry. The mean A1C decreased from 7.9% (SD=0.47, N=45) to 7.5% (SD=0.73, N=37) over the six-month follow-up (Figure 3).

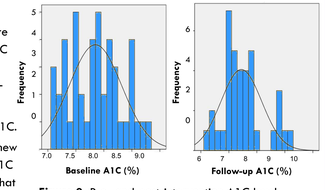

Figure 3. Pre- and post-intervention A1C levels.

ACT: New QI projects were planned to target A1C.

- ***A1C improvement project:*** The physician set a new goal to track patients with diabetes with an A1C >8% and improve the rate of A1C control in that cohort in 2014.
- ***Patient-centered medical home (PCMH):*** The physician participated in the initial state-based PCMH data submission in 2015, which focused on reducing the percentage of patients with diabetes with A1C uncontrolled (>9%), among other quality measures.

Conclusion

The A1C project demonstrated lowered mean A1C levels among patients with A1C levels from 7% to 9%. A longer follow-up period or larger sample size may be necessary to detect statistically significant improvements.

Lessons Learned

A successful approach to controlling A1C levels emphasizes the importance of patient diabetes self-management education and support when making lifestyle and medication changes to control their diabetes.

Montana Diabetes Program

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This program was supported by the State of Montana; Cooperative Agreement Numbers 3U58DP001977 and 1U58DP004818-01 with the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia; and Centers for Medicare & Medicaid Services (CMS) in Baltimore, Maryland. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.